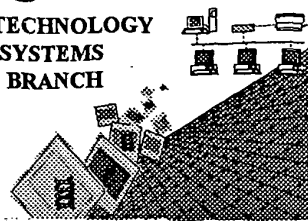


RAW SEQUENCE LISTING ERROR REPORT

BIOTECHNOLOGY
SYSTEMS
BRANCH



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/049,988
Source: Pt 1/10
Date Processed by STIC: 3/5/2002

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.1 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 01/29/2002

Raw Sequence Listing Error Summary

ERROR DETECTED

SUGGESTED CORRECTION

SERIAL NUMBER: 10/049,988

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 Wrapped Nucleics
 Wrapped Aminos The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to 3; this will prevent "wrapping."
- 2 Invalid Line Length The rules require that a line not exceed 72 characters in length. This includes white spaces.
- 3 Misaligned Amino
 Numbering The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
- 4 Non-ASCII The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
- 5 Variable Length Sequence(s) contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6 PatentIn 2.0
 "bug" A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequence(s). Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
- 7 Skipped Sequences
 (OLD RULES) Sequence(s) missing. If intentional, please insert the following lines for each skipped sequence:
 (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
 (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
 (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
 This sequence is intentionally skipped

 Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
- 8 Skipped Sequences
 (NEW RULES) Sequence(s) missing. If intentional, please insert the following lines for each skipped sequence.
 <210> sequence id number
 <400> sequence id number
 000
- 9 Use of n's or Xaa's
 (NEW RULES) Use of n's and/or Xaa's have been detected in the Sequence Listing.
 Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.
 In <220> to <223> section, please explain location of n or Xaa; and which residue n or Xaa represents.
- 10 Invalid <213>
 Response Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
- 11 Use of <220> Sequence(s) missing the <220> "Feature" and associated numeric identifiers and responses.
 Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.
 (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
- 12 PatentIn 2.0
 "bug" Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
- 13 Misuse of n n can only be used to represent a single nucleotide in a nucleic acid sequence. N is not used to represent any value not specifically a nucleotide.



PCT/0

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/049,988

DATE: 03/05/2002

TIME: 14:00:57

Input Set : A:\seqlist-1.txt

Output Set: N:\CRF3\03052002\J049988.raw

1,3-6
Does Not Comply
Corrected Diskette Needed

3 <110> APPLICANT: Biosyn Arzneimittel GmbH
5 <120> TITLE OF INVENTION: Nucleic acid molecule comprising a nucleic acid sequence
6 which codes for a haemocyanin, and comprising at least one
7 intron sequence
9 <130> FILE REFERENCE: PCT1220-01966
11 <140> CURRENT APPLICATION NUMBER: US/10/049,988
12 <141> CURRENT FILING DATE: 2002-02-20
14 <160> NUMBER OF SEQ ID NOS: 108
16 <170> SOFTWARE: PatentIn Ver. 2.1

ERRORED SEQUENCES

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415 <213> ORGANISM: Haliotis tuberculata
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420 tgccctttac aagctacaga acgaccacag totaacggga tacgaagcaa tctctgggta 180
421 ccatggatac cccaatctgt gtccgggaaga aggcgatgac aaaatacccc tgctgcgtcc 240
422 ccggatgggc atctttcctt actggcacag actcttgacc attcaactgg aaagagctct 300
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436 gcgagttttc aagtatgaca tcacagaggt tgcagataga cttaaaatta agttatgggg 1140
437 acacccttta acttccggaa ctggagatca catccttacg aatggaatcg gtggtaaaca 1200
438 agagcctacc caaatccttt catcatctac agacctgcca atcatgacta ccatgttctt 1260
E--> 439 gttatcccag ~~ta~~ gaagaa ~~ac~~ cttcacat ~~cc~~ ctccaaa ~~gt~~ tgtcgtca ~~ag~~ aaaggcac 1320
440 ccgcacgcag ttccaccag tcgatgttc agttacgaga ccagttgttg atcttggaag 1380
441 ctacactgca ctcttcaact gtgtgtgacc accgttcaca taccacggat tcgaactgaa 1440
442 ccaagctctat tctgtcaagc ctggtgacta ctatgttact ggaccacga gagacctttg 1500

*see
item 9 on
Env
Summary sheet*

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/049,988

DATE: 03/05/2002

TIME: 14:00:57

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1862 1 5 10 15

1864 Thr Asp Gly Asn Ala His Phe His Arg Lys Glu Val Asp Ser Leu Ser

1865 20 25 30

1867 Leu Asp Glu Ala Asn Asn Leu Lys Asn Ala Leu Tyr Lys Leu Gln Asn

1868 35 40 45

1870 Asp His Ser Leu Thr Gly Tyr Glu Ala Ile Ser Gly Tyr His Gly Tyr

1871 50 55 60

1873 Pro Asn Leu Cys Pro Glu Glu Gly Asp Asp Lys Ile Pro Leu Leu Arg

1874 65 70 75 80

1876 Pro Arg Met Gly Ile Phe Pro Tyr Trp His Arg Leu Leu Thr Ile Gln

1877 85 90 95

1879 Leu Glu Arg Ala Leu Glu His Asn Gly Ala Leu Leu Gly Val Pro Tyr

1880 100 105 110

1883 Trp Asp Trp Asn Lys Asp Leu Ser Ser Leu Pro Ala Phe Ser Asp

1884 115 120 125

1886 Ser Ser Asn Asn Asn Pro Tyr Phe Lys Tyr His Ile Ala Gly Val Gly

1887 130 135 140

1889 His Asp Thr Val Arg Glu Pro Thr Ser Leu Ile Tyr Asn Gln Pro Gln

1890 145 150 155 160

1892 Ile His Gly Tyr Asp Tyr Leu Tyr Tyr Leu Ala Leu Thr Thr Leu Glu

1893 165 170 175

1895 Glu Asn Asn Tyr Trp Asp Phe Glu Val Gln Tyr Glu Ile Leu His Asn

1896 180 185 190

1898 Ala Val His Ser Trp Leu Gly Gly Ser Gln Lys Tyr Ser Met Ser Thr

1899 195 200 205

1901 Leu Glu Tyr Ser Ala Phe Asp Pro Val Phe Met Ile Leu His Ser Gly

1902 210 215 220

1904 Leu Asp Arg Leu Trp Ile Ile Trp Gln Glu Leu Gln Lys Ile Arg Arg

1905 225 230 235 240

1907 Lys Pro Tyr Asn Phe Ala Lys Cys Ala Tyr His Met Met Glu Glu Pro

1908 245 250 255

1910 Leu Ala Pro Phe Ser Tyr Pro Ser Ile Asn Gln Asp Glu Phe Thr Arg

1911 260 265 270

1913 Ala Asn Ser Lys Pro Ser Thr Val Phe Asp Ser His Lys Phe Gly Tyr

1914 275 280 285

1916 His Tyr Asp Asn Leu Asn Val Arg Gly His Ser Ile Gln Glu Leu Asn

1917 290 295 300

1919 Thr Ile Ile Asn Asp Leu Arg Asn Thr Asp Arg Ile Tyr Ala Gly Phe

1920 305 310 315 320

1922 Val Leu Ser Gly Ile Gly Thr Ser Ala Ser Val Lys Ile Tyr Leu Arg

1923 325 330 335

1925 Thr Asp Asp Asn Asp Glu Glu Val Gly Thr Phe Thr Val Leu Gly Gly

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/049,988

DATE: 03/05/2002

TIME: 14:00:57

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Output Set: N:\CRF3\03052002\J049988.raw

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1932          370          375          380
1934 Thr Ser Gly Thr Gly Asp His Ile Leu Thr Asn Gly Ile Gly Gly Lys
1935 385          390          395          400
1937 Gln Glu Pro Thr Gln Ile Leu Ser Ser Ser Thr Asp Leu Pro Ile Met
1938          405          410          415
E--> 1940 Thr Thr Met Phe Leu Leu Ser Gln Xaa Gly Arg Asn Leu His Ile Pro item 9
1941          420          425          430
1943 Pro Lys Val Val Val Lys Lys Gly Thr Arg Ile Glu Phe His Pro Val
1944          435          440          445
1946 Asp Asp Ser Val Thr Arg Pro Val Val Asp Leu Gly Ser Tyr Thr Ala
1947          450          455          460
1949 Leu Phe Asn Cys Val Val Pro Pro Phe Thr Tyr His Gly Phe Glu Leu
1950 465          470          475          480
1952 Asn His Val Tyr Ser Val Lys Pro Gly Asp Tyr Tyr Val Thr Gly Pro
1953          485          490          495
1955 Thr Arg Asp Leu Cys Gln Asn Ala Asp Val Arg Ile His Ile His Val
1956          500          505          510
1958 Glu Asp Glu
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2854 <212> TYPE: DNA
2855 <213> ORGANISM: Haliotis tuberculata
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E--> 2860 caattgctgc ttatcacgga agtccctcca tgtgtcacat gcttgatggt agagacgttg 180 item 9
2861 catgttgtac tcatggaatg gcatctttcc ctactggca cagactgttt gtgaaacaga 240
2862 tggaggatgc actggctgcg catggagctc acattggcat accatactgg gattggacaa 300
2863 gtgcgtttag tcatctgcct gccctagtga ctgaccacga gcacaatccc ttccaccacg 360
2864 gacatattgc tcatcggaat gtggatacat ctcgatctcc gagagacatg ctgttcaatg 420
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2867 ctggaggaca tactccatat ggaatgtcat cactggaata tacagcatat gatccactct 600
2868 ttatctccca ccatccaac actgatcgta tctgggccat ctggcaggca ctccagaaat 660
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2870 aaccattcag cgagtccagg aatccaaacc cagtcaccag agccaattct agggcagtcg 780
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RAW SEQUENCE LISTING

DATE: 03/05/2002

PATENT APPLICATION: US/10/049,988

TIME: 14:00:57

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4138 <211> LENGTH: 395

4139 <212> TYPE: PRT

4140 <213> ORGANISM: Megathura crenulata

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4146 Ala Ser Glu Ile Glu Asn Leu Arg His Ala Leu Gln Ser Val Met Asp

4147 20 25 30

4149 Asp Asp Gly Pro Asn Gly Phe Gln Ala Ile Ala Ala Tyr His Gly Ser

4150 35 40 45

E--> 4152 Pro Pro Met Cys His Met Xaa Asp Gly Arg Asp Val Ala Cys Cys Thr

4153 50 55 60

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4156 65 70 75 80

4158 Met Glu Asp Ala Leu Ala Ala His Gly Ala His Ile Gly Ile Pro Tyr

4159 85 90 95

4161 Trp Asp Trp Thr Ser Ala Phe Ser His Leu Pro Ala Leu Val Thr Asp

4162 100 105 110

4164 His Glu His Asn Pro Phe His His Gly His Ile Ala His Arg Asn Val

4165 115 120 125

4167 Asp Thr Ser Arg Ser Pro Arg Asp Met Leu Phe Asn Asp Pro Glu His

4168 130 135 140

4170 Gly Ser Glu Ser Phe Phe Tyr Arg Gln Val Leu Leu Ala Leu Glu Gln

4171 145 150 155 160

4173 Thr Asp Phe Cys Gln Phe Glu Val Gln Phe Glu Ile Thr His Asn Ala

4174 165 170 175

4176 Ile His Ser Trp Thr Gly Gly His Thr Pro Tyr Gly Met Ser Ser Leu

4177 180 185 190

4179 Glu Tyr Thr Ala Tyr Asp Pro Leu Phe Tyr Leu His His Ser Asn Thr

4180 195 200 205

4182 Asp Arg Ile Trp Ala Ile Trp Gln Ala Leu Gln Lys Tyr Arg Gly Phe

4183 210 215 220

4185 Gln Tyr Asn Ala Ala His Cys Asp Ile Gln Val Leu Lys Gln Pro Leu

4186 225 230 235 240

4188 Lys Pro Phe Ser Glu Ser Arg Asn Pro Asn Pro Val Thr Arg Ala Asn

4189 245 250 255

4191 Ser Arg Ala Val Asp Ser Phe Asp Tyr Glu Arg Leu Asn Tyr Gln Tyr

4192 260 265 270

4194 Asp Thr Leu Thr Phe His Gly His Ser Ile Ser Glu Leu Asp Ala Met

4195 275 280 285

4197 Leu Gln Glu Arg Lys Lys Glu Glu Arg Thr Phe Ala Ala Phe Leu Leu

4198 290 295 300

4200 His Gly Phe Gly Ala Ser Ala Asp Val Ser Phe Asp Val Cys Thr Pro

4201 305 310 315 320

4203 Asp Gly His Cys Ala Phe Ala Gly Thr Phe Ala Val Leu Gly Gly Glu

4204 325 330 335

4206 Leu Glu Met Pro Trp Ser Phe Glu Arg Leu Phe Arg Tyr Asp Ile Thr

4207 340 345 350

4209 Lys Val Leu Lys Gln Met Asn Leu His Tyr Asp Ser Glu Phe His Phe

Item 9

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/10/049,988

DATE: 03/05/2002
 TIME: 14:00:57

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4645 aatgcccttt acaagctaca gaacgaccac agtctaacgg gatacgaagc aatctctggt 180
4646 taccatggat accccaatct gtgtccggaa gaaggcgatg acaaaatacc cctgctgcgt 240
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4648 cttgagcaca atggtgcact gcttgggtgt ccttactggg actggaacaa ggacctgtcg 360
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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/049,988

DATE: 03/05/2002

TIME: 14:00:58

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4991 <213> ORGANISM: Megathura crenulata
4993 <400> SEQUENCE: 108
4994 ggtcacgac acagtgaacg tcacgatgga tttttcagga aggaagtcgg ttccctgtcc 60
4995 ctggatgaag ccaatgacct taaaaatgca ctgtacaagc tgcagaatga tcaggggtccc 120
4996 aatggatatg aatcaatagc cggttaccat ggctatccat tctctgtccc tgaacatggt 180
4997 gaagaccagt acgcatgctg tgtccacgga atgcctgtat ttccacattg gcacagactt 240
4998 catacaatcc agtttgagag agctctcaaa gaacatggtt ctcatTTggg tctgccatac 300
4999 tgggactgg 309

```

E--> 5005

Delete

Use of **n** and/or **Xaa** has been detected in the Sequence Listing.
 Review the Sequence Listing to insure a corresponding
 explanation is presented in the <220> to <223> fields of
 each sequence using **n** or **Xaa**.

VERIFICATION SUMMARY

DATE: 03/05/2002

PATENT APPLICATION: US/10/049,988

TIME: 14:00:59

Input Set : A:\seqlist-1.txt

Output Set: N:\CRF3\03052002\J049988.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:439 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:15
L:1940 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:39
L:2860 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:62
L:4152 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:79
L:4664 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:95
L:4969 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:107
L:5005 M:254 E: No. of Bases conflict, LENGTH:Input:8 Counted:309 SEQ:108